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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,069	09/25/2003	Edmund J. Ring	58781 US002	5858

32692 7590 12/13/2004

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ST. PAUL, MN 55133-3427

EXAMINER
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HOANG, TU BA

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/671,069

Applicant(s)

RING, EDMUND J.

Examiner

Tu Ba Hoang

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/29/03</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

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**QUAYLE ACTION**

This application is in condition for allowance except for the following formal matters:

In claim 1, at line 9: between "resonant" and "circuit", the term "heating" should be inserted for being consistent.

In claim 4, at line 5: after "resonant", the phrase "heating circuit" should be inserted and at line 6: between "value" and "the pulse", the word "and" should be inserted for being consistent.

In claim 8, at line 4: between "resonant" and "circuit", the term "heating" should be inserted for being consistent, at line 5: before "level determinator", the article "a" should be inserted, and at line 8: the term "the" (before "predetermined minimum") should be changed to "a" (since this is the first occurrence of the predetermined minimum threshold value).

In claim 12, at lines 2-3: the phrase "the control signal" should be changed to "a switch control signal" because there is no "control signal" being recited earlier except a switch control signal generated by the pulse controller 28 shown in Figures 1, 2, and 4, and at line 3: the phrase "power switch" should be changed to "resonant heating circuit" (as shown in Figures 1, 2, and 4) because the power switch which itself comprises the IGBT including the collector and should be connected to itself.

In claim 13, at lines 2, 3, 5, and 7: between "resonant" and "circuit", the term "heating" should be inserted in order to provide the heating function for the claimed method and to provide the consistency for the latter recitation of "resonant heating circuit" (i.e., see claim 15).

In claim 14, at line 1: before "switch", the term "power" should be inserted for being consistent.

In claim 16, at line 2: "an AC" should be changed to "the AC" since such AC source has already been cited in the preamble, at line 16: the term "power" should be changed to "voltage" because only the average voltage was earlier cited (note at line 13), and at lines 6, 10, 12, 13, and 16: The phrase "resonant circuit" (all occurrences) should be changed to "resonant heating circuit" for a better clarification and for at least providing the heating function for the claimed induction heating system (also note in claims 18, at line 2, in claim 19, at line 4, and in claim 21, at line 1).

In claim 17, at line 3: the phrase "power switch" should be changed to "resonant heating circuit" (as shown in Figures 1, 2, and 4) because the power switch which itself comprises the IGBT including the collector and should be connected to itself.

In claim 19, at line 4: the phrase "first and second capacitor" should be changed to "first and second capacitors".

In claim 20, at line 2: the phrase "the resistor" should be changed to "a resistor" since this is a first occurrence of the resistor.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Bailey (US 3,757,197), Trine (US 3,777,100), De Leon (US 4,292,487), Barritt et al (US 5,648,008), Green et al (US 6,163,019), and Ryan et al (US 6,649,888).

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Claims 1-22 are objected to as for the formal matters set forth above.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not show or fairly suggest an induction heating system and method of heating thereof which includes a pulse initiator configured to provide a monitoring voltage or an average value of a peak voltage of an oscillating voltage across a resonant heating circuit and to provide a pulse initiation signal to initiate application of a subsequent DC voltage pulse to the resonant heating circuit in the manner recited in claims 1 and 16 (i.e., applying a subsequent DC voltage pulse to the resonant heating circuit upon detecting the average peak-to-peak voltage of the oscillating voltage across the resonant heating circuit as recited in claim 13).

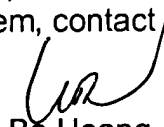
Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-fri from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu Ba Hoang  
Primary Examiner  
Art Unit 3742

December 06, 2004